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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC
FOURTH FLOOR
1755 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202

EXAMINER
FUREMAN, JARED

ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 05/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/692,371	KRUL ET AL.	
	Examin r	Art Unit	
	Jared J. Fureman	2876	

-- Th MAILING DATE of this communication app ars on the cov r sh et with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 October 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Receipt is acknowledged of the preliminary amendment filed on 10/20/2000, which has been entered in the file. Claims 1-25 are pending.

Claim Objections

1. Claims 4 and 8 are objected to because of the following informalities:

Claim 4, line 2: --(IC)-- should be inserted after "circuit", in order to clarify the claim.

Claim 8, line 2-3: the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). For examination purposes the claim has been interpreted so as to not include the limitations following the phrase "such as".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5, 6, 16, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzerini (US 6,126,076) in view of Brown et al (Logic Gates Made From Polymer Transistors and Their Use in Ring Oscillators, cited by applicant).

Lazzerini teaches a security thread (security strip) comprising an insulating support (film 1), provided with a conductive security thread (layer 13), a substrate made from paper (bank notes or paper currency, the substrate that the security strip is

designed to be used with), the paper being a bank note/security (see figures 1, 2, column 1 lines 5-11, 56-63, and column 2 lines 12-59).

Lazzerini fails to teach a flexible integrated circuit comprising a semiconductive organic polymer, electrical contacts for the integrated circuit, wherein the organic polymer is selected from conjugated polymers, wherein the organic polymer is poly(thienylenevinylene), wherein the integrated circuit is a contactlessly readable IC which can be read in a capacitive manner, wherein the conductive security thread is connected to the integrated circuit, which security thread serves as a contact for readout operations and for current supply, wherein the integrated circuit forms part of the security thread, an insulating layer on the semiconductive organic polymer

Brown et al teaches a flexible integrated circuit comprising a semiconductive organic polymer, electrical contacts for the integrated circuit, wherein the organic polymer is selected from conjugated polymers, wherein the organic polymer is poly(thienylenevinylene), wherein contacts are connected to the integrated circuit, which contacts serve for readout operations and for current supply (it is necessary that the contacts serve for readout operations and to supply current for operation of the semiconductor), an insulating layer on the semiconductive organic polymer, (see pages 972 and 974).

In view of Brown et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Lazzerini, a flexible integrated circuit comprising a semiconductive organic polymer, electrical contacts for the integrated circuit, wherein the organic polymer is selected

from conjugated polymers, wherein the organic polymer is poly(thienylenevinylene), wherein the integrated circuit is a contactlessly readable IC which can be read in a capacitive manner, wherein the conductive security thread is connected to the integrated circuit, which security thread serves as a contact for readout operations and for current supply, wherein the integrated circuit forms part of the security thread, an insulating layer on the semiconductive organic polymer, in order to provide inexpensive data storage, thereby increasing the authentication/verification capabilities of the security thread.

4. Claims 4, 9-12, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzerini as modified by Brown et al as applied to claim 1 above, and further in view of the admitted prior art.

Lazzerini as modified by Brown et al fails to specifically teach the integrated circuit being a contactlessly readable integrated circuit which can be read in an inductive or capacitive manner, wherein the integrated circuit comprises a preprogrammed code which is applied before incorporating the circuit in the substrate, wherein the integrated circuit comprises a code of an intrinsic property of the substrate, which code, after the substrate is produced, is arranged in the integrated circuit, wherein the code is an encrypted code, wherein the substrate comprises additional security features, wherein the paper has a thickness up to 100 μm,

The admitted prior art teaches that it was well known in the art at the time of the invention to provide a contactlessly readable integrated circuit which can be read in an inductive or capacitive manner (see page 4 lines 8-11), wherein the integrated circuit

comprises a preprogrammed code which is applied before incorporating the circuit in the substrate (see page 7 line 31 - page 8 line 15), wherein the integrated circuit comprises a code of an intrinsic property of the substrate, which code, after the substrate is produced, is arranged in the integrated circuit (see page 7 line 31 - page 8 line 15), wherein the code is an encrypted code (see page 7 line 31 - page 8 line 15), wherein the substrate comprises additional security features (see page 8 lines 2-15), and that for banknote paper the thickness of the substrate usually lies in the range of up to 100 μm (see page 4 lines 35-37).

In view of the admitted prior art, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Lazzerini as modified by Brown et al, the integrated circuit being a contactlessly readable integrated circuit which can be read in an inductive or capacitive manner, wherein the integrated circuit comprises a preprogrammed code which is applied before incorporating the circuit in the substrate, wherein the integrated circuit comprises a code of an intrinsic property of the substrate, which code, after the substrate is produced, is arranged in the integrated circuit, wherein the code is an encrypted code, wherein the substrate comprises additional security features, wherein the paper has a thickness up to 100 μm, in order to prevent wear on the substrate caused by repeatedly coming into contact with reading terminals, in order to provide a greater security, and to provide a paper suitable for use in banknotes.

5. Claims 13-15 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzerini as modified by Brown et al as applied to claim 1 above, and further in view of Giustiniani et al (EP 0 753 623 A2, cited by applicant).

Lazzerini as modified by Brown et al fails to specifically teach an additional security feature being a dye, a security document comprising the substrate, the security document being a passport, identity card, or a security.

Giustiniani et al teaches a security sheet that includes an additional security feature being a dye (see page 6 lines 20-23), a security document comprising the substrate, the security document being a passport, identity card, or a security (a check) (see page 2 lines 3-8, 42-44, and page 3 lines 27-34).

In view of Giustiniani et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Lazzerini as modified by Brown et al, an additional security feature being a dye, a security document comprising the substrate, the security document being a passport, identity card, or a security, in order to provide greater security against counterfeiting through the use of the additional security feature, and to provide security for documents that require an anti-forgery system.

6. Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzerini as modified by Brown et al, further in view of Bratchley et al (US 6,155,605).

The teachings of Lazzerini as modified by Brown et al have been discussed above.

Lazzerini as modified by Brown et al fails to specifically teach wherein the integrated circuit forms part of an optically active element.

Bratchley et al teaches a substrate having an optically active element (a foil or hologram) included with another security feature (another entity) (see column 4 line 36 - column 5 line 26).

In view of Bratchley et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Lazzerini as modified by Brown et al, wherein the integrated circuit forms part of an optically active element, in order to provide greater security.

7. Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzerini as modified by Brown et al as applied to claim 1 above, and further in view of Uetani et al (JP 8-259709).

Lazzerini as modified by Brown et al fails to specifically teach the substrate further comprising polyimide having polyaniline blocks thereon underneath the semiconductive organic polymer, the substrate having an uppermost layer of polyaniline.

Uetani et al teaches the use of a polyimide having a polyaniline for a semiconductor sheet (see the translation of the abstract).

In view of Uetani et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Lazzerini as modified by Brown et al, the substrate further comprising polyimide having polyaniline blocks thereon underneath the semiconductive organic polymer, the

substrate having an uppermost layer of polyaniline, in order to provide a semiconductor that is stable even when environmental conditions fluctuate.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzerini as modified by Brown et al and the admitted prior art, further in view of Giustiniani.

The teachings of Lazzerini as modified by Brown et al and the admitted prior art have been discussed above.

Lazzerini as modified by Brown et al and the admitted prior art fails to specifically teach wherein the security thread has a thickness which lies in the range from 5-60% of the thickness of the substrate.

Giustiniani teaches the use of a security thread wherein the security thread has a thickness which lies in the range from 5-60% of the thickness of the substrate (the thickness of the security thread is 20 μm, the security thread is included in a currency bill paper, which usually has a thickness in the range of up to 100 μm) (see page 6 lines 44-53).

In view of Giustiniani's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Lazzerini as modified by Brown et al and the admitted prior art, wherein the security thread has a thickness which lies in the range from 5-60% of the thickness of the substrate, in order to provide a security thread which is suitable for use in banknotes.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wolpert et al (US 6,255,948 B1), Gerz (US 6,094,147), Holbein

et al (US 4,504,357), Mueck et al (EP 0 860 298 A2) all teach substrates including a security strip.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared J. Fureman whose telephone number is (703) 305-0424. The examiner can normally be reached on 7:00 am - 4:30 PM M-T, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (703) 305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

jjf
May 15, 2002

MICHAEL G. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800